REMARKS

Claims 1-13 are pending in this application. Claim 14 is newly added herein. Upon entry of this amendment, claims 1-14 will be pending. Entry of this amendment and reconsideration of the rejections are respectfully requested.

No new matter has been introduced by this Amendment. Support for the amendments to the claims is discussed below.

Claims 1-7 are rejected under 35 U.S.C. §103(a) as being unpatentable over Takahashi et al. (JP 04066172) in view of Takahashi et al. (US 3,883,453, herein referred to as '453). (Office action p. 2)

The rejection of claims 1-7 is respectfully traversed, and reconsideration is requested.

The Examiner states that Takahashi discloses a method of forming a coating, and cites the general disclosure of the reference (English translation) at page 6, lines 1-16, as disclosing a coating composition comprised of monomers such as hydroxyl-, carboxyl-, and amino group-containing monomers. The Examiner cites page 7, lines 9-15, as disclosing alkyl esters of methacrylic acid, which would include C_{6-18} esters. The Examiner cites page 8, lines 13-16, as disclosing a hydroxyl group and carboxyl group-containing resin having a hydroxyl value of 30 to 200 and an acid number of 20 to 150, overlapping the values in claim 1. The Examiner also refers to Manufacturing Example 2 at page 19, line 21, to page 20, line 11, which includes a melamine resin (page 20, lines 6-7).

In traversing the rejection, Applicant argues that (1) JP '172 and US '453 cannot be combined to produce the present claims, and (2) there are results, commensurate in scope with the present claims, that are unexpected over JP '172 and US '453.

(1) Regarding the combination of Takahashi US '453 with Takahashi JP '172

Takahashi JP '172 discloses using, as the monomer (4), a C_{1-18} alkyl ester of (meth)acrylic acid (page 3, upper right column, lines 6 to 7; see translation at page 7, line 10), and as the resin (1), hydroxyalkyl (meth)acrylate (page 2, lower right column, second line from the bottom to last line; see translation at page 6, line 18). JP '172 further discloses that the copolymer has a hydroxy value of about 30 to 200 and an acid value of above 20 to 150 (page 3, lower left column, fifth line from bottom to third line from bottom; see translation at page 8, line 14).

Takahashi JP '172 does not mention the amount of the monomer (4) and the resin (1) contained in the monomer mixture.

US '453 discloses polymerizing a monomer mixture comprising:

30 to 96 wt. % of (meth)acrylic acid alkyl ester A having 1 to 18 carbon atoms in the alkyl group;

4 to 25 wt. % of hydroxyalkyl (meth)acrylate B; and α,β-ethylenic unsaturated carboxylic acid C (see column 2, lines 31 to 32, and 45 to 50).

The Examiner is of the opinion that it would be obvious to those skilled in the art to combine the disclosure of US '453 with that of Takahashi JP '172. However, Applicant submits that the disclosure of US '453 cannot be combined with that of Takahashi JP '172.

US '453 uses, as a constituent composition of the coating composition, a solution obtained by polymerizing the monomer mixture in cellulose acetate butyrate (CAB) solution (column 1, lines 23 to 31; and Example 1, etc.). The obtained solution comprises a polymer wherein the (meth)acrylic-acid alkyl ester A, the hydroxyalkyl (meth)acrylate B, and the α,β-ethylenic unsaturated carboxylic acid C are graft polymerized in CAB.

Each of said monomer components being graft polymerized in CAB is readily understandable to those skilled in the art, as is disclosed in, for example, paragraphs [0028] and [0029] of Japanese Unexamined Patent Publication No. H6-1949, cited in the concurrently filed Information Disclosure Statement.

Such a graft polymer is barely soluble in an organic solvent, and, more significantly, cannot be dissolved or dispersed in an aqueous medium. That is, the graft polymer **cannot be used as a resin component of an aqueous coating composition**. This is well known to those skilled in the art.

The proposed combination of references requires using the graft polymer of US '453 in the aqueous coating composition of Takahashi JP '172. However, this combination would not be functional due to the above-discussed solubility issues, and would not work for the intended purpose in the reference. MPEP 2143.01(V) states:

> If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984)

Therefore, there is no *prima facie* case of obviousness.

(2) Unexpected results commensurate with a coating composition according the present claims

In addition to the above argument against the *prima facie* case of obviousness, Applicant submits that the present claims show results that are unexpected over the cited art.

Base claim 1 is directed to a coating composition comprising a resin having a hydroxy value of 90 to 150 mg-KOH/g and an acid value of 1 to 30 mg-KOH/g obtained by using a monomer mixture comprising 10 to 50 wt. % of a C_{6-18} alkyl ester of (meth)acrylic acid, and 8 to 40 wt. % of an unsaturated monomer containing secondary hydroxyl.

The use of such a coating composition allows for the formation of a coat with sag- and pop-preventative properties, and an excellent appearance; the use of the coating composition also allows for the formation of a clear coat with excellent recoat adhesion and a primer coat with excellent adhesion. This is clearly shown in the data in Tables 1 to 6 of the present application.

US '453 discloses nothing about forming a primer coat with excellent adhesion and a clear coat with excellent recoat adhesion. The results associated with the present claims are therefore clearly unexpected over this reference.

Accordingly, it would not be expected from the combination of the disclosures of Takahashi JP '172 and US '453 that a coating composition comprising a resin having a hydroxy value of 90 to 150 mg-KOH/g and an acid value of 1 to 30 mg-KOH/g obtained by using a monomer mixture comprising 10 to 50 wt. % of a C_{6-18} alkyl ester of (meth)acrylic acid, and 8 to 40 wt. % of an unsaturated monomer containing secondary hydroxyl makes it possible to form a clear coat with excellent recoat adhesion and a primer coat with excellent adhesion.

In view of the above arguments arguing (1) that JP '172 and US '453 cannot be combined, and (2) that claims 1-7 show advantageous results that are unexpected over the cited references, Applicant submits that claims 1-7 are not obvious over JP '172 and US '453, taken separately or in combination.

Claims 8-13 are rejected under 35 U.S.C. §103(a) as being unpatentable over Takahashi (JP '172) in view of '453 further in view of Hirata et al. (US 5,252,399). (Office action p. 5)

The rejection of claims 8-13 is respectfully traversed, and reconsideration is requested.

The Examiner states that Takahashi JP '172 and '453 do not specify a powdered primer precoating or a clear coating, and cites Hirata '399 for teaching a coating for aluminum wheels at column 1, lines 5-25. The Examiner cites the reference as disclosing a primer layer of a powder coating composition, a base coat layer of an acrylic composition, a topcoat composition on the base coat layer, and a clear acrylic barrier coating on the topcoat composition, citing column 2, lines 37-

50. The Examiner states that it would have been obvious to modify the teachings of the Takahashi references with the four-layer coating process taught by Hirata, because "all of the references are drawn to lowering the amount of organic solvents used in the coating. ...."

In traversing the rejection, Applicant argues, as above, that base claim 1, from which all of claims 8-13 ultimately depend, is not obvious over the combination of JP '172 and US '453.

US '399 does not disclose or suggest a coating composition according to claim 1, that is, a coating composition comprising a resin having a hydroxy value of 90 to 150 mg-KOH/g and an acid value of 1 to 30 mg-KOH/g obtained by using a monomer mixture comprising 10 to 50 wt. % of a C_{6-18} alkyl ester of (meth)acrylic acid, and 8 to 40 wt. % of an unsaturated monomer containing secondary hydroxyl. The combination of US '399 with JP '172 and US '453 does not provide the limitations of claim 1.

Claims 8-13 are therefore not obvious over JP '172, US '453 and US '399, taken separately or in combination.

Regarding new claim 14.

New claim 14 depends from claim 1, and limits the acrylic resin (A) to have an acid value of 1 to 16 mg KOH/g. Support for this upper limit of 16 mg KOH/g may be found, for example, in the Examples in Table 1, on page 24 of the present specification. With regard to acid number, cited reference Takahashi JP '172 discloses a range of 20 to 150 (page 8, line 15, of translation). There is no overlap between the acid value range in Takahashi and the range in new claim 14.

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact the applicants' undersigned agent at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed, the applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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Enclosure: Information Disclosure Statement

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